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Production of .omega.-cyanocarboxamides from aliphatic .alpha.,.omega.-dinitriles using pseudomonas putida-derived biocatalysts

Description of Technology: The invention has provided methods for obtaining aliphatic omega-cyanocaboximides of Formula I wherein n=1-8 and R.sub.1 or R.sub.2 are either H or CH.sub.3, from dinitriles of Formula II wherein n=1-8 and R.sub.1 or R.sub.2 are either H or CH.sub.3, using biocatalysts which have regioselective nitrile hydratase activity and which are derived from members of the bacterial species Pseudomonas putida.

Patent Listing:

1. **US Patent No.** 5,728,556, Issued on March 17, 1998, "Production of .omega.-cyanocarboxamides from aliphatic .alpha.,.omega.-dinitriles using pseudomonas putida-derived biocatalysts."
http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&co1=AND&d=PTXT&s1=5,728,556.PN.&OS=PN/5,728,556&RS=PN/5,728,556

Market Potential: The hydrolysis of nitriles has long been useful for the production of various amide intermediates in processes for making polymers such as nylon and polyacrylamide. Processes involving enzymatic conversion of nitrile substrates are sometimes favored over chemical synthesis for their production of fewer harmful reaction by-products and for greater reaction specificity.

Benefits:

- Fewer harmful reaction by-products.
- Great reaction specificity.

Applications:

- Production of nylon.
- Production of polyacrylamide.

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